

DISCUSSION OF THE AMENDMENT

Claim 1 has been amended by inserting a flow property limitation, as supported in the specification in the paragraph bridging pages 2 and 3, combined with page 12, lines 3-5, and by adding to the preamble for purposes of emphasis that the substrate is hydrophobic/oleophobic, which limitation is already present in the body of the claim.

No new matter is believed to have been added by this amendment. Claims 1, 2 and 4-64 remain pending in this application. Claims 1, 2, 4-18, 27-31 and 61-63 are active; Claims 19-26, 32-60 and 64 stand withdrawn from consideration as being drawn to non-elected subject matter.¹

¹ The Office Action, at paragraph 2, incorrectly includes Claims 27-31 and 61-63 as withdrawn from consideration. This is an obvious error, because these claims are later rejected in paragraph 5 over prior art.

REMARKS

Applicants thank the Examiner for the courtesy extended to Applicants' attorney during the interview held April 24, 2006, in the above-identified application. During the interview, Applicants' attorney explained the presently-claimed invention and why it is patentable over the applied prior art. The discussion is summarized and expanded upon below.

The rejections of Claims 1-4,² 6-10, 15, 17, 18, 27-31 and 61-63 under 35 U.S.C. § 102(e) as anticipated by, and of Claims 5, 11-14 and 16 under 35 U.S.C. § 103(a) as unpatentable over, US 6,352,758 (Huang et al), are respectfully traversed.

As recited in above-amended Claim 1, an embodiment of the present invention relates to a substrate, comprising:

a relief;
wherein said relief consists of a low surface level and a high surface level,
said high surface level has a height not less than 1/10 of the dimensions of a plurality of motifs forming said high surface level,
wherein said dimensions are in the region of a micrometer,
wherein said height ranges between 0.1 and 10 micrometers,
wherein said high surface level represents 1 to 65% of a surface of the substrate;
wherein said substrate is hydrophobic/oleophobic, and
wherein said relief provides an angle of advance of a drop of water greater than such angle provided on a flat substrate, which is otherwise the same as said substrate but without said relief, without substantially changing the hysteresis obtained with the flat substrate.

In response to Applicants' argument in the last response that Huang et al is directed to an article, the surface of which is patterned with alternating narrow hydrophobic areas and

² Note that Claim 3 has been previously canceled.

large hydrophilic surface areas while the present active claims require that the substrate be hydrophobic/oleophobic, the Examiner simply repeats her finding that Huang et al “discloses that the substrate is hydrophobic/oleophobic and further comprises an agent of a silicone, such as SiO₂ (*col. 5, line 10*).”

In reply, and as Applicants’ attorney noted during the above-referenced interview, the cited excerpt from Huang et al refers to silica-containing polymeric coatings that may be included in the **hydrophilic** areas of Huang et al. In addition, the silica-containing polymeric coatings of Huang et al relate to particular polymers containing silica *per se*, not silicones.

More fundamentally, as discussed above, Huang et al requires both hydrophobic and hydrophilic areas. In one embodiment of Huang et al, the hydrophobic regions are narrower so that the growth of dew droplets is prevented on these regions (column 2, lines 65-67). Moisture in air is then forced to migrate towards the larger hydrophilic regions, without forming droplets on hydrophobic zones. There, water is spread into a thin film (column 3, lines 32-34 and column 8, lines 59-63), due to the hydrophilic nature of said larger areas. Therefore, the object of Huang et al is to obtain a substrate wherein the water is mainly present on its surface in the form of a thin film, by virtue of the presence of large hydrophilic areas.

In order to meet the terms of Claim 1 (and claims dependent thereon) herein, one skilled in the art would, at a minimum, have to remove the hydrophilic regions of Huang et al. If a proposed modification would render a prior art invention unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984). See also MPEP 2143.01.

During the above-referenced interview, the Examiner conceded that the cited excerpt did not support her position but stated that the specification herein was “confusing” in that

hydrophilic/oleophilic substrates as well as combined hydrophilic/oleophilic - hydrophobic/oleophobic substrates were described, and moreover, the term “comprising” as used in the present claims did not exclude the hydrophilic/oleophilic areas of Huang et al.

Applicants’ response is that the specification is inclusive of embodiments that are broader than what is now being claimed. There is no confusion regarding the embodiment wherein the substrate is hydrophobic/oleophobic. The preamble of Claim 1 has been amended for emphasis. While Claim 1 still contains the transitional phrase “comprising”, thus leaving the claims open to inclusion of non-recited features, no rule of claim construction could possibly allow for such features that are inconsistent with explicit claim limitations. In other words, the claims are not inclusive of any feature that results in the substrate not being hydrophobic/oleophobic.

In addition, as Applicants have previously argued, and now repeat, and as Applicants’ attorney pointed out during the above-referenced interview, the claimed textured substrate is characterized by the formation and growth of water drops on the whole of its surface and by an improved flow of said drops, due to the hydrophobic/oleophobic properties of the substrate and to the particular relief present on the whole of its surface. Thus, Applicants desire a relatively high contact angle with water, high angles of advance with little or no change in hysteresis, i.e., difference between angle of advance and angle of retreat, as demonstrated by the Table at page 11 of the specification. Notably, advancing angles as high as 170 degrees and retreating angles as high as 155 degrees can be achieved. There is no disclosure or suggestion in Huang et al that such excellent hydrophobic properties can be achieved.

This feature is now explicitly recited in the claims, which Applicants respectfully submit was already inherently present in the recited structure, and is fully responsive to the Examiner’s response to the above argument in the Office Action, which is that the limitations on which Applicants rely, i.e., improved flow of drops, are not stated in the claims.

Application No. 09/926,367
Reply to Office Action of April 4, 2006

For all the above reasons, it is respectfully requested that the rejections be withdrawn.

All of the presently-pending and active claims in this application are believed to be in immediate condition for allowance. The Examiner is respectfully requested to rejoin non-elected process claims of even scope, and in the absence of further grounds of rejection, pass this application to issue with said rejoined claims.

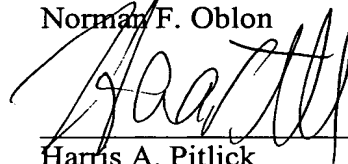
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